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SUGHRUE MION ZINN
MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20037-3213

EXAMINER
HA, YVONNE QUY M

ART UNIT	PAPER NUMBER
2664	5

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 July 2000_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-46_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-46_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-15, 18-20, 22-38, 41-43, 45, and 46 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Birdwell et al. (US Patent 6,172,972) in view of Anderson et al. (US

Patent 6,434,137).

Referring to claims 1, 3, 4, 26, 27, Birdwell discloses transporting frame relay data over a

satellite (col.2, lines 41-42, figure 2) or wireless network, comprising the steps of: receiving

frame relay packets from a frame relay network (col. 3, lines 4-13); segmenting the payload data

of each of the frame relay packets to form spackets (i.e. smaller packets) (col. 3, lines 9-18;

figure 3); forming fixed-sized satellite/wireless frames (col. 3, lines 23-25), each containing

plural spackets and a variable number of error correction code bytes (col. 5, lines 37-39); and

transmitting the satellite/wireless frames over the satellite or wireless network (col. 4, lines 1-6,

figure 2). Birdwell failed to disclose queues with priorities. However, Anderson discloses a

method for transferring information within a mobile communication where high, medium and

low priorities are placed in queues (col. 37, lines 48-53, 65-66). At the time of the invention, it

would have been obvious to a person of ordinary skill in the art to combine the teaching Birdwell

transporting variable length data over a satellite with the Anderson's message priorities are

stored in different queues. Prioritizing messages will give the network more efficiency by

prioritizing various events such as emergency event, call control. It is conventional to prioritize

urgent messages as high priority over other messages.

Referring to claims 2 and 25, Birdwell discloses all aspects of the claimed invention and

further teaches compressing the spackets prior to forming the satellite/wireless frames (figure 3,

reference 102).

Referring to claims 5 and 28, Birdwell discloses all aspects of the claimed invention but

failed to teach the plurality of queues correspond to a plurality of virtual channels. However,

Anderson discloses the plurality of queues correspond to a plurality of virtual channels (col. 37,

lines 65-67). At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to combine the teaching Birdwell transporting variable length data over a satellite

with the Anderson's message priorities are stored in different queues. The queues are a series of

messages or packets awaiting the availability of a network resource. Queues are associated with

buffers on an incoming/outgoing ports.

Referring to claims 6 and 29, Birdwell discloses all aspects of the claimed invention and

further teaches segmenting step includes segmenting the payload data of each of the frame relay

packets into plural spackets, wherein all of the plural spackets, except a last of the plural

spackets, is required to be n bytes in length (col. 5, lines 29-47).

Referring to claims 7 and 30, Birdwell discloses all aspects of the claimed invention and

further teaches segmenting step includes prepending each spacket with a header (col. 5, line 41).

Referring to claims 8 and 31, Birdwell discloses all aspects of the claimed invention and

further teaches the header of each spacket includes: a packet number indicating to which frame

relay packet the spacket corresponds (col. 5, line 38); a sequence number indicating the position

of the spacket within the frame relay packet (col. 5, line 59-61); a VC Id field indicating the

virtual channel to which the frame relay packet corresponds (col. 5, line 7-11); and a last field

indicating whether or not the spacket is the last spacket in the frame relay packet (col. 5, line 65-

66).

Referring to claims 9 and 32, Birdwell discloses all aspects of the claimed invention and

further teaches a VC identifier contained in the VD Id field is compressed from a VC identifier

contained in the frame relay packet (col. 5, line 7-11, figure 3, reference 104).

Referring to claims 10 and 33, Birdwell discloses all aspects of the claimed invention and

further teaches the spackets contained within a satellite/ wireless frame are variable in size (col.

2, line 48).

Referring to claims 11 and 34, Birdwell discloses all aspects of the claimed invention and

further teaches a single spacket is transmittable over plural satellite/wireless frames (col. 5, line

36-38).

Referring to claims 12 and 35, Birdwell discloses all aspects of the claimed invention and

further teaches forming step includes forming an interleaver frame from plural satellite/wireless

frames, wherein the order of the bytes in the interleaver frame is rearranged to spread the effects

of burst errors over several satellite/wireless frames (col. 6, line 12-17; col. 7, lines 24-33).

Referring to claims 13, 18, 36, and 41, Birdwell discloses all aspects of the claimed

invention and further teaches monitoring the condition of a link over the satellite or wireless

network, wherein varying the variable number of error correction code bytes in response to

variations in link conditions observed in said monitoring step (col. 7, line 37-41).

Referring to claims 14 and 37, Birdwell discloses all aspects of the claimed invention and further teaches calculating a byte error ratio and said forming step includes setting the number of error correction code bytes as a function of the byte error ratio (col. 9, line 33-43).

Referring to claims 15 and 38, Birdwell discloses all aspects of the claimed invention and further teaches the byte error ratio is calculated more quickly when the bit error rate is high and more slowly when the bit error rate is low (col. 9, line 41-46).

Referring to claims 19, 20, 42, and 43, Birdwell discloses all aspects of the claimed invention and further teaches the header of each satellite/wireless frame includes: a field indicating the number of spackets in the frame (col. 5, line 38); a field indicating a size of a first partial spacket in the frame col. 5, line 48-50); a field indicating a sequence number of the frame col. 5, line 59-61); a field indicating the number of error correction code bytes in the frame (col. 6, line 12-16); a field indicating the number of error correction code bytes to be used in frames to be received (col. 6, line 13-23); and a field indicating whether the spackets in the frame are compressed(col. 7, line 19-29).

Referring to claims 22 and 45, Birdwell discloses all aspects of the claimed invention and further teaches receiving satellite/wireless frames from the satellite or wireless network (figure 7; col. 11, lines50-54); re-sequencing the spackets contained in the received satellite/wireless frames and reassembling the frame relay packets from the re-sequenced spackets (col. 11, lines 59-65); and transmitting the reassembled frame relay packets to the frame relay network (col. 11, lines 59-67).

Referring to claims 23 and 46, Birdwell discloses all aspects of the claimed invention and further teaches decompressing the spackets prior to resequencing the spackets (col. 11, lines 50-51; col. 14, lines 56-58).

Referring to claim 24, Birdwell discloses a system for processing frame relay data to be transported over a satellite or wireless network (col.2, lines 41-42, figure 2), comprising: a frame relay physical and data link layer processor for receiving frame relay packets from a frame relay network (col. 3, lines 4-13; col. 5, lines 1-8); a segmentation processor for segmenting the payload data of each of the frame relay packets to form spackets (i.e. smaller packets) (col. 3, lines 9-18; figure 3); and a satellite/wireless frame processor adapted to form fixed-sized satellite/wireless frames to be transmitted over the satellite or wireless network (col. 3, lines 23-25; col. 4, lines 1-6, figure 2), each of the fixed-sized satellite/wireless frames including a variable number of error correction code bytes (col. 5, lines 37-39). Birdwell failed to disclose queues with priorities. However, Anderson discloses a method for transferring information within a mobile communication where high, medium and low priorities are placed in queues (col. 37, lines 48-53, 65-66). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching Birdwell transporting variable length data over a satellite with the Anderson's message priorities are stored in different queues. Prioritizing messages will give the network more efficiency by prioritizing various events such as emergency event, call control. It is conventional to prioritize urgent messages as high priority over other messages.

3.   Claims 16, 17, 21, 39, 40, and 44, are rejected under 35 U.S.C. 103(a) as being

unpatentable over Birdwell et al. (US Patent 6,172,972) in view of Anderson et al. (US Patent

6,434,137) in further view of Machida et al. (US Patent 5,781,561).

Referring to claims 16, 17, 21, 39, 40, and 44, Birdwell discloses all aspects of the

claimed invention and further teaches theReed Solomon coding check bytes (i.e. FEC; col. 7,

lines 12-14). Birdwell failed to disclose the Viterbi control codes. However, Machida discloses

the bit error could be lowered by adding Reed Solomon codes (col. 7, lines 42-54). At the time of

the invention, it would have been obvious to a person of ordinary skill in the art to combine the

teaching Birdwell transporting variable length data over a satellite with the Anderson's message

priorities are stored in different queues and Machida coding algorithms. The Viterbi decoder uses

an algorithm for decoding the Trellis encoded signals, which is well known in the art.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

- Sauer et al. (US Patent 6,034,950) discloses system packet-based

    centralized base station controller

- Hemmady et al. (US Patent 5,438,565) discloses packet switch to provide

    CDMA cellular service

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Yvonne Q. Ha whose telephone number is 703-305-8392. The

examiner can normally be reached on Monday-Friday 7a.m.-4p.m. Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-3900.

YQH

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600